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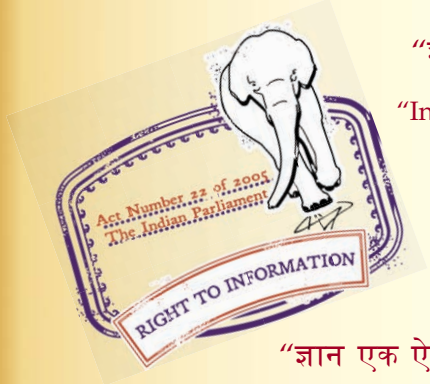
"Step Out From the Old to the New"

IS 8271-3-2 (1982): Quartz Crystal Units Used for Frequency Control and Selection, Part 3: Series, BC for Oscillators, Section 2: Quartz Crystal Unit Type BC-02 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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Indian Standard (Reaffirmed 2006)

SPECIFICATION FOR QUARTZ CRYSTAL UNITS USED FOR FREQUENCY CONTROL AND SELECTION

PART III SERIES BC FOR OSCILLATORS

Section 2 Quartz Crystal Unit Type BC-02

0. General — This standard shall be read in conjunction with IS : 8271 (Part I)-1981 ' Specification for quartz crystal units used for frequency control and selection: Part I General requirements and tests (*first revision*) '.

1. Outline and Dimensions — Holder outline shall conform to Type BC (*see* Sheet No. 5 of IS : 4570-1968 Specification for crystal holders).

2. Marking — *See* 8 of IS : 8271 (Part I)-1981.

3. Construction and Workmanship — *See* 7 of IS : 8271 (Part I)-1981.

4. Test Schedule and Detail Requirements

4.1 *General Conditions for Test* — *See* 9.2 of IS : 8271 (Part I)-1981.

4.2 *Test Schedule* — The sequence and grouping of type, routine and acceptance tests shall be as per 9.1 of IS : 8271 (Part I)-1981.

4.3 *Detail Requirements* — The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE BC-02

Sl No.	Characteristic	Requirement
(1)	(2)	(3)
i)	Type of holder	BC (*See* 1)
ii)	Frequency range	5 to 20 MHz
iii)	Frequency tolerance:	
	a) Over operating temperature: range	± 50 ppm
iv)	Resonance resistance	*See* Table 2
v)	Mode of oscillation	Fundamental
vi)	Load capacitance	30 ± 0·5 pF
vii)	Capacitance shunt	7 pF *Max*
viii)	Operating temperature range	−55°C to +105°C
ix)	Test set, calibration values and rated drive level	*See* Table 3
x)	Shock [as per 9.15 (Severity A) of IS : 8271 (Part I) - 1981]:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent

(*Continued*)

Adopted 21 May 1982 Gr 1

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TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE BC-02 — *Contd*

Sl No.	Characteristic	Requirement
(1)	(2)	(3)
xi)	Vibration [as per 9.16.1 (Severity A) of IS : 8271 (Part I)-1981]:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent
xii)	Temperature cycling:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent
xiii)	Temperature run:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent
xiv)	Ageing Frequency change permitted	5 ppm

TABLE 2 RESONANCE RESISTANCE

[Table 1, *Item* (iv)]

Frequency Range MHz	Maximum Resonance Resistance Ohms
(1)	(2)
From 5 to 6	75
Over 6 to 7	50
Over 7 to 10	30
Over 10 to 20	25

TABLE 3 TEST SET, CALIBRATION VALUES AND RATED DRIVE LEVEL

[Table 1, *Item* (ix)]

Sl No.	Frequency Range	Calibration Values			Rated Drive Level
		Resistance	Crystal Current	Resistor Voltage Drop	
	MHz	Ohms	mA	V	mW
(1)	(2)	(3)	(4)	(5)	(6)
i)	From 5 to 7·5	25	14	—	5·0 ± 1·0
ii)	Over 7·5 to 10	16	18	—	
iii)	Over 10 to 15	13	20	—	
iv)	Over 15 to 20	12	—	0·24	

For Sl No. (i) to (iii) — Test Set TS-330/TSM.
For Sl No. (iv) — Test Set TS-683/TSM.

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